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by Renee D. East
Date of signature and deposit - January 25, 2006

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Application of: Benjamin J. Parker et al | Group Art Unit: 2153 |
| Serial No.: 10/054,539 | Confirmation No.: 5974 |
| Filed: 10/25/2001 | Examiner: Aaron N. Strange |
| For: Service-Based Network Packet Routing Redirection Using An Address Server | Attorney Docket: 1687(15722) |

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APPELLANT'S AMENDED BRIEF ON APPEAL

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the final rejection of the Examiner mailed June 20, 2005, rejecting claims 1-15, all of the claims in the case. This Amended Brief on Appeal is submitted to correct the deficiencies noted in the Notice mailed January 13, 2006.

REAL PARTY IN INTEREST

The real party in interest in the present appeal is Sprint Communications Company L.P., assignee of the entire right, title, and interest in the present application.

## RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to appellant, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## STATUS OF CLAIMS

The application was filed on October 25, 2001, with 15 claims, all of which are still pending.

The status of the claims is as follows:

Allowed claims : none.

Claims objected to : none.

Claims rejected : 1-15.

## STATUS OF AMENDMENTS

The amendment filed March 22, 2005, presented minor modifications to claims 1-8, all of which were entered. No further amendments to the claims have been presented. The amended claims are set out in the Appendix.

## SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates in general to providing computer networking services with optional service features or resources, and, more specifically, to apparatus and methods for redirecting traffic from a user in response to a determination of authorized services that are accessible to the user.

In a typical computer network, most types of communication depend upon unique addresses assigned to specific hardware components on the network (specification page 1, lines

11-19). The address of an intended recipient is included in each packet or datagram transmitted within the network so that the recipient can recognize and process transmissions intended for it. A full address may include a network address portion, a hardware or host portion, and a port identification.

Computer network service providers operate local or wide area networks which may include a hub or gateway that functions as a concentrator or aggregator connected to a plurality of remote users (page 1, lines 20-35). The gateway routes user traffic to destinations in the local network or to an external network, such as the Internet. One type of known gateway is the service selection gateway (SSG) which allows users to connect to various subscribed, on-demand network services. These subscription services may include a walled garden having various content servers, video on-demand servers, and voice services, or may include a firewall for handling all traffic between the user and the Internet, for example.

A user request for connection with a service may identify the desired service with a logical (e.g., textual) name or other place holder which is not the actual network address of the desired service. When a service selection gateway receives traffic from a user, it must direct that traffic according to 1) a user service profile that identifies the services to which the user has subscribed and 2) the requested service or destination implicit within the traffic received from the user (page 2, lines 1-12). If the user is authorized to use the particular service, then the service selection gateway routes the corresponding user packets to the appropriate service by inserting the correct IP address for the service into the packets. Since any initial destination address may be replaced, this process is called redirection.

Prior art service selection gateways have been configured with the IP address corresponding to each service or host to which user traffic is to be redirected. These addresses are stored in a bound services table 28 shown in Figures 2 and 3. Whenever the network resources are changed (e.g., adding or deleting services, or replacing host equipment), the bound services table in each service selection gateway must be manually reconfigured (page 2, lines 13-22). This is especially burdensome for larger networks using many concentrators/service selection gateways accessing the services because each service selection gateway must be individually reconfigured.

The present invention avoids the foregoing problem of manually reconfiguring each

service selection gateway when an IP address associated with a particular service or host needs to be changed by modifying the way in which the service selection gateway determines the address for redirection. The bound services address table is replaced by a memory 34 (Figure 5) storing a table of bound services logical names (page 7, lines 3-9). The service selection gateway consults an address server 32 (Figure 4) to resolve the logical names into IP addresses (page 6, lines 21-37).

As specifically recited in claim 1, an address server stores numerical network addresses for service-option resources and a respective logical name corresponding to each numerical network address (page 7, lines 13-22). The address server responds to queries by providing a numerical network address corresponding to a logical name contained in a respective query (page 8, lines 8-10). An authorization server stores respective user profiles for identifying service-option resources to which each one of a plurality of users are authorized to use (page 7, lines 35-37). A plurality of service selection gateways are coupled to the service-option resources, the address server, and the authorization server. Each service selection gateway 1) receives user traffic from a respective user directed to a nominal destination, 2) determines if the user traffic directed to the nominal destination should be redirected to a respective logical name corresponding to one of the service-option resources in response to a respective user profile, and 3) queries the address server for a respective numerical network address for redirecting the user traffic according to the respective logical name (page 8, lines 8-13).

Similarly, claim 8 recites assigning a logical name corresponding to each of the numerical network addresses for service-option resources (page 7, lines 15-19). Each numerical network address is stored with its respective logical name in an address server (page 7, lines 21-22). Respective user profiles for identifying service-option resources to which each one of a plurality of users are authorized to use are also stored (page 7, lines 24-34). A service selection gateway receives user traffic from a user in the form of a packet having a nominal destination (page 7, lines 23-24). A respective logical name is determined to which the packet should be redirected in response to a respective user profile (page 7, line 35, to page 8, line 7). The service selection gateway queries the address server for a respective numerical network address corresponding to the respective logical name (page 8, lines 8-10). The address server responds with the respective numerical network address and the service selection gateway redirects the

packet to the respective numerical network address (page 8, lines 10-13).

## GROUNDS OF REJECTION TO BE REVIEWED

1. Whether Claims 1-3, 8, 10, and 11 are unpatentable under 35 U.S.C. §103 over Zhang et al in view of RAD Data Communications (hereafter RAD).

## ARGUMENT

Claims 1-3, 8, 10, and 11

The final rejection fails to establish a case of prima facie obviousness of any claims. Zhang fails to disclose any details concerning the manner in which user traffic is redirected after a user has been authenticated. Zhang provides less detail about the redirection process than is given in the prior art description of the present specification relating to Figures 2 and 3. There is no suggestion in Zhang for any access point or gateway to refer to any of the available services using logical names. Likewise, there is no teaching in Zhang of an address server storing a respective logical name corresponding to each numerical network address of a service-option resource.

The present specification teaches that the address server utilized by the service selection gateways can be similar in structure to a domain name server (DNS). However, the recited address server is not a domain name server.

The secondary reference of RAD is merely a description of the domain name service. It explains how that system saves humans from needing to know the numerical IP addresses of desired web sites. Strings of numbers are far less convenient for Internet users to remember than textual names such as Sprint.com. The present invention involves a computer (i.e., the service selection gateway) determining an address to be used for redirecting traffic according to tables stored in its memory. To a computer, a numerical address and a logical name are the same as far as storing them in memory and being able to recall them -- they are both just data. The human accessing the service options is unaffected by the implementation of the present invention. The purpose for a DMS as shown by RAD is irrelevant to a service selection gateway. The address server of the present invention is fulfilling an entirely different purpose -- which is to make

reconfiguration of service-option resources possible without making any changes to the service selection gateways. Therefore, there is no motivation to modify Zhang by adding an address server having logical names for services to which particular user traffic may be redirected by an SSG.

Applicant has previously pointed out that the final rejection employs impermissible hindsight in an attempt to reconstruct the elements of the claimed invention. The fact that a DNS-like address server has advantages in the claimed context is not sufficient to show motivation to combine the DNS system of RAD with the service selection gateway of Zhang in such a way that the claimed limitations are produced. The Office Action of February 23, 2005, attempts to show motivation by suggesting that it would be "easier for administrators to remember the names of the available resources when configuring the gateways." In actuality, when changes are made, the administration of the system requires the administrator to continue to know the numerical IP address since it will be necessary to modify the address server to account for changes in resources. In addition to the knowledge of the numerical address, the present invention requires the administrator to know the logical name to be associated with the numerical address. Therefore, the added convenience proposed by the final rejection does not exist.

The objective of the present invention is not to make configuring of the service selection gateways easier; it is to avoid reconfiguring them at all when service-option resources are changed. In paragraph 2 of the Advisory Action mailed August 11, 2005, it is stated that the "administrator in question does not configure the address servers." This statement is extraneous to the actual problem existing in the prior art and is contrary to the specification. The service options made available to a user via the service selection gateways change only rarely compared to the frequency of changes made in the actual network hardware supporting the options. As shown in Figure 8, the present invention does pertain to modification of the IP addresses on the address server. In implementing the present invention, not only does the administrator still need to always know the numerical address, they must now know the additional information of the logical name.

With respect to the separate task of administrative set-up of a new service selection gateway, speculation of existence of a distinct advantage from the proposed combination is

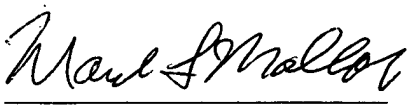
unwarranted. Clearly, nothing from the proposed hypothetical situation leads to evidence of motivation to combine the references. From a network perspective, set-up will always require configuration of numerical addresses at some point, and no network technician or other administrative personnel could expect to completely avoid exposure to numerical addresses. It is doubtful that any meaningful improvement in performing administrative functions would be realized by some person who does not set up the address servers as suggested in the rejection. Furthermore, any small advantage to a technician in one limited situation would not justify the added network overhead and additional hardware that would have been required to achieve it. Thus, there is no motivation to combine RAD with Zheng et al and claims 1-3, 8, 10, and 11 are allowable.

## CONCLUSION

The final rejection has failed to establish a case of prima facie obviousness of any of claims 1-15. The prior art relied upon in the final rejection neither teaches nor suggests the structure or function of the present invention nor does it provide any teaching which can obtain the significant advantages which are achieved by the present invention. Accordingly, the final rejection should be reversed.

An oral hearing is not requested. Please charge any fees to Sprint Communications Company L.P. deposit account 21-0765. A copy of this sheet is enclosed for accounting purposes.

Respectfully submitted,



Mark L. Mollon
Registration No. 31,123
Attorney for Appellant

Date: January 25, 2006
MacMillan, Sobanski & Todd, LLC
One Maritime Plaza, Fourth Floor
720 Water Street
Toledo, Ohio 43604
Tel: 734-542-0228

## CLAIMS APPENDIX

Claims 1-15 now read as follows:

1. A network system comprising:

a plurality of service-option resources each having a respective numerical network address;

an address server storing said numerical network addresses and a respective logical name corresponding to each numerical network address, said address server responding to queries by providing a numerical network address corresponding to a logical name contained in a respective query;

an authorization server storing respective user profiles for identifying service-option resources to which each one of a plurality of users are authorized to use; and

a plurality of service selection gateways coupled to said service-option resources, said address server, and said authorization server, each service selection gateway 1) receiving user traffic from a respective user directed to a nominal destination, 2) determining if said user traffic directed to said nominal destination should be redirected to a respective logical name corresponding to one of said service-option resources in response to a respective user profile, and 3) querying said address server for a respective numerical network address for redirecting said user traffic according to said respective logical name.

2. The network system of claim 1 wherein said numerical network addresses are comprised of IP addresses.

3. The network system of claim 1 wherein said service-option resources include subscription services and wherein said network system further comprises a service selection dashboard through which said users obtain authorization for said subscription services.

4. The network system of claim 1 wherein said service-option resources include at least one firewall resource.

5. The network system of claim 1 wherein said service-option resources include at least one virus-scanning resource.

6. The network system of claim 1 wherein said service-option resources include at least one content-filtering resource.

7. The network system of claim 1 wherein said service-option resources include at least one walled-garden resource.

8. A method of forwarding user traffic in a computer network including a plurality of service-option resources each having a respective numerical network address, said method comprising the steps of:

assigning a logical name corresponding to each of said numerical network addresses;

storing each of said numerical network addresses with its respective logical name in an address server;

storing respective user profiles for identifying service-option resources to which each one of a plurality of users are authorized to use;

receiving at a service selection gateway user traffic from a user in the form of a packet having a nominal destination;

determining a respective logical name to which said packet should be redirected in response to a respective user profile;

said service selection gateway querying said address server for a respective numerical network address corresponding to said respective logical name;

said address server responding with said respective numerical network address; and

said service selection gateway redirecting said packet to said respective numerical network address.

9. The method of claim 8 further comprising the steps of:

reconfiguring said service-option resources, resulting in changed numerical network

addresses; and

modifying said stored numerical network addresses on said address server;

whereby said service selection gateway continues to redirect said packets to a correct numerical network address after said reconfiguring step without requiring any changes to said service selection gateway.

10. The method of claim 8 wherein said numerical network addresses are comprised of IP addresses.

11. The method of claim 8 further comprising the step of directing said user to a service selection dashboard for configuring said user profile.

12. The method of claim 8 wherein said service-option resources include at least one firewall resource.

13. The method of claim 8 wherein said service-option resources include at least one virus-scanning resource.

14. The method of claim 8 wherein said service-option resources include at least one content-filtering resource.

15. The method of claim 8 wherein said service-option resources include at least one walled-garden resource.

## EVIDENCE APPENDIX

No evidence has been submitted under 37 CFR §§1.130, §§1.131, §§1.132, or otherwise.

## RELATED PROCEEDINGS APPENDIX

There are no related proceedings and no corresponding decisions rendered.